

## Concomitant hypodontia and hyperdontia: A report of two cases

### ABSTRACT

“Concomitant hypodontia and hyperdontia” is a very rare dental anomaly of number, having a prevalence rate of 0.002%–3.1%. It describes the simultaneous presence of hypodontia or missing teeth and supernumerary teeth in the same individual. It represents the opposite forces of nature acting simultaneously. Two rare cases of this anomaly involving different jaws and a classification based on the literature review have been presented here.

**Keywords:** Hyperdontia, hypodontia, mesiodens, oligo-pleiodontia

### INTRODUCTION

The term “concomitant hypodontia and hyperdontia” was introduced by Camilleri to describe the simultaneous presence of hypodontia and supernumerary teeth in the same individual.<sup>[1]</sup> This is a very rare dental anomaly of number, representing opposite forces of nature acting simultaneously.<sup>[2]</sup> It has also been described as “Oligo-pleiodontia” by Nathanail or simply “Hypo-hyperdontia” by Gibson.<sup>[3,4]</sup>

Its etiology is difficult to explain, however, disturbances in migration, proliferation, and differentiation of neural crest cells or interactions between the epithelial and mesenchymal cells during the initiation of odontogenesis have been described as its possible causes.<sup>[2,3,5]</sup>

The review of dental literature revealed very few reported cases till date. This anomaly of number is known to involve both primary and permanent dentitions. The anomaly may occur in the same region of a jaw as reported by Ferguson,<sup>[3]</sup> Das *et al.*<sup>[6]</sup> and Segura *et al.*<sup>[3]</sup> or may occur in different regions in the same jaw as described by Matsumoto *et al.*<sup>[7]</sup> Zhu *et al.*<sup>[3]</sup> has described it to involve opposite jaws while Sharma<sup>[2]</sup> and Anthonappa *et al.*<sup>[4]</sup> have reported it in both maxilla and mandible. It has not been shown to have any gender predilection, though several researchers have stated a male

dominance.<sup>[4]</sup> The reported prevalence of hyperdontia varies with the race; 0.15% and 3.9% for caucasians and higher than 3% in mongoloids. In contrast, hypodontia excluding the third molars has a reported prevalence of 1.6%–9.6% in the general population. The prevalence rates for hypohyperdontia range from 0.002% to 3.1%.<sup>[4]</sup>

The supernumerary teeth or missing teeth, when present alone, can lead to an imbalance in the dental arch. Simultaneous occurrence of these two anomalies creates an unusual clinical condition. This article presents two rare nonsyndromic cases of concomitant hypodontia and hyperdontia.

**NITESH TEWARI, RAMESH KUMAR PANDEY<sup>1</sup>,  
SUBASH SINGH<sup>2</sup>**

Department of Pedodontics and Preventive Dentistry, Centre for Dental Education and Research, All India Institute of Medical Sciences, New Delhi, <sup>1</sup>Department of Pedodontics and Preventive Dentistry, Faculty of Dental Sciences, King George's Medical University, <sup>2</sup>Department of Pedodontics and Preventive Dentistry, Babu Banarasi Das College of Dental Sciences, BBD University, Lucknow, Uttar Pradesh, India

**Address for correspondence:** Dr. Nitesh Tewari, Department of Pedodontics and Preventive Dentistry, Centre for Dental Education and Research, All India Institute of Medical Sciences, New Delhi, India.  
E-mail: dr.nitesht@gmail.com

### Access this article online

**Website:**  
www.njms.in

**DOI:**  
10.4103/0975-5950.208976

### Quick Response Code



This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

**For reprints contact:** reprints@medknow.com

**How to cite this article:** Tewari N, Pandey RK, Singh S. Concomitant hypodontia and hyperdontia: A report of two cases. Natl J Maxillofac Surg 2017;8:75-7.

## CASE REPORTS

### Case 1

A 13-year-old boy reported with the chief complaint of malaligned upper front teeth. He had an insignificant medical history with no previous dental treatment. No consanguinity was reported in the parents.

The oral examination revealed the presence of a mesiodens along with another supernumerary tooth palatal to permanent maxillary left central incisor. Both the supernumerary teeth had a conical crown. Their presence resulted in anterior crowding and proclination of the permanent maxillary left and right central incisors [Figure 1].

### Radiographic findings

The orthopantomograph and intraoral periapical radiograph of maxillary anterior region revealed two conical supernumeraries in relation to permanent maxillary central incisors and left lateral incisor. It also exhibited completely developed roots of the supernumerary teeth. The most striking but chance finding was the absence of all the permanent maxillary and mandibular third molars and permanent mandibular left second premolar [Figure 2a and b].

### Case 2

A 10-year-old girl reported with the chief complaint of tooth decay and malaligned upper front teeth. The medical history was noncontributory with no history of past dental treatment. No consanguinity was reported in the parents.

The oral examination revealed the presence of a mesiodens resulting in proclined permanent maxillary right central incisor and maxillary anterior crowding. The mandibular arch also revealed anterior crowding [Figure 3b].

### Radiographic findings

The orthopantomograph and intraoral periapical radiograph of maxillary anterior region revealed one conical supernumerary tooth (mesiodens) in relation to permanent maxillary central incisors with completely developed root. The most striking but coincidental finding was the absence of permanent mandibular right second premolar [Figure 3a and c].

### Treatment approach

This unusual and rare juxtaposition of the opposite forces of nature demands a comprehensive treatment planning with a long-term follow-up.<sup>[6,7]</sup> Both the cases in the present report were also explained the comprehensive treatment plan comprising of extraction of the supernumerary tooth and fixed orthodontic treatment. The primary



Figure 1: Mirror image showing mesiodens and a supernumerary tooth palatal to 21



Figure 2: (a) Panoramic radiograph showing supernumerary teeth along with the absence of 18, 28, 35, 38, and 48. (b) Intraoral periapical radiograph showing two conical supernumerary teeth with completely developed roots



Figure 3: (a) Panoramic radiograph showing supernumerary tooth along with the absence of 45. (b) Mesiodens with proclined 11. (c) Intraoral periapical radiograph showing one conical supernumerary tooth with completely developed roots

tooth (without successor) was proposed to be retained as a natural space maintainer followed by the prosthodontic rehabilitation of congenitally missing tooth. Both the patients were not ready for the long-term treatment and did not turn up for follow-up.

## DISCUSSION

The anomalies of number, though more common in certain syndromes of head and neck, are rare in the nonsyndromic patients. Ectodermal dysplasia, Down syndrome, cleft lip and palate, hypoparathyroidism, and pseudohypoparathyroidism are more commonly associated with missing teeth while supernumerary teeth are seen more commonly in cleidocranial dysostosis and Gardner's syndrome.<sup>[2,3]</sup> Concomitant hypodontia and hyperdontia have been reported in patients with Down syndrome, Dubowitz syndrome, Ellis-van Creveld syndrome, fucosidosis, and conditions such as cleft lip and palate.<sup>[4]</sup> Ranta has described the anomaly of hypohyperdontia as an uncommon entity with an obscure etiology.<sup>[5]</sup>

This anomaly involves the problems not only associated with the supernumerary teeth but with the missing teeth too. The supernumerary teeth create a space crisis leading to several orthodontic challenges and an occlusal imbalance.<sup>[7]</sup> The associated hypodontia adds another dimension to this situation. When both anomalies coexist in the same region: "intra arch-intra for the prosthetic quadrant" [Table 1], the presence of supernumerary (supplemental) tooth can be advantageous rehabilitation.

According to Matsumoto *et al.* when this condition is present in different regions: "intra arch-inter quadrant, inter arch

and compound inter arch," it exhibits two problems of conflicting nature [Table 1].<sup>[7]</sup> Similar situation presented in both cases where OPG served as key diagnostic aid to establish it. Since the hypodontia of permanent teeth in this anomaly is generally asymptomatic, it usually is discovered as a chance finding. Exact etiopathogenesis which drives the agenesis of tooth germ in one part and hyper-genesis in other is still debatable as mentioned by several authors.<sup>[7]</sup> A combined interdisciplinary approach between the pedodontist, orthodontist, oral surgeon, and prosthodontist along with early detection and long-term follow-up has been recommended for the majority of cases of concomitant hypodontia and hyperdontia.<sup>[2,3,5-7]</sup>

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Camilleri GE. Concomitant hypodontia and hyperodontia. Case report. Br Dent J 1967;123:338-9.
2. Sharma A. A rare non-syndrome case of concomitant multiple supernumerary teeth and partial anodontia. J Clin Pediatr Dent 2001;25:167-9.
3. Zhu JF, Marcushamer M, King DL, Henry RJ. Supernumerary and congenitally absent teeth: A literature review. J Clin Pediatr Dent 1996;20:87-95.
4. Anthonappa RP, Lee CK, Yiu CK, King NM. Hypohyperdontia: Literature review and report of seven cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2008;106:e24-30.
5. Ranta R. Numeric anomalies of teeth in concomitant hypodontia and hyperdontia. J Craniofac Genet Dev Biol 1988;8:245-51.
6. Das G, Sarkar S, Bhattacharya B, Saha N. Coexistent partial anodontia and supernumerary tooth in the mandibular arch: A rare case. J Indian Soc Pedod Prev Dent 2006;24 Suppl 1:S33-4.
7. Matsumoto M, Nakagawa Y, Sobue S, Ooshima T. Simultaneous presence of a congenitally missing premolar and supernumerary incisor in the same jaw: Report of case. ASDC J Dent Child 2001;68:63-6, 32.

**Table 1: Proposed classification of concomitant hypodontia and hyperdontia**

Classifications	Characteristics
Intra arch- intra quadrant	When hypo and hyperdontia exist with in the same arch and the same quadrant of a jaw
Inter arch- intra quadrant	When hypo and hyperdontia exist in different arches but the quadrant in both arches is same
Compound inter arch	When hypo and hyperdontia exist in different arches and different quadrants